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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/692,879 | 10/23/2003 | Cheah Chiang Sun | 70020777-1 | 1934 |

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EXAMINER

BODDIE, WILLIAM

ART UNIT PAPER NUMBER

2629

DATE MAILED: 08/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/692,879 | Applicant(s) SUN, CHEAH CHIANG | |
| | Examiner William Boddie | Art Unit 2629 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. In an amendment dated, July 10th, 2006, the Applicant amended claims 1-2 and traversed the rejections of claims 1-6.

Response to Arguments

2. Applicant's arguments filed July 10th, 2006 have been fully considered but they are not persuasive.

3. On page 4 of the Remarks, the Applicant argues that Badyal allows the user to rotate the pen therefore the previous Office Action's motivation to combine is flawed.

The Examiner respectfully disagrees. Badyal struggles with how to determine the orientation and rotation of the pen in the user's hand. This is clearly seen in column 3, lines 42-61 which details numerous methods to ensure that the pen is not rotated in the user's hand once a reference motion direction has been set.

4. At the top of page 5 of the Remarks, the Applicant argues that there is no suggestion as to how one would incorporate that system of Howard into the device of Howard. The Examiner respectfully disagrees; the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, Badyal has expressed problems regarding the determination of the rotation of the pen in the user's hand.

Howard provides a system that allows detection of rotation and orientation of a device in

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a user's hand. It seems clear from these facts that it would have been obvious to one of ordinary skill in the art to incorporate the device of Howard into Badyal's invention to overcome the problems discussed by Badyal.

5. Also on page 5 of the Remarks, the Applicant argues that the device of Howard merely measures the amount of change since the last position measurement, not the absolute position of the device to which the mechanism is attached.

The Examiner respectfully disagrees with the interpretation of the Applicant. Howard explicitly discloses, measuring the angular displacement of the disk, as well as determining the motion rate and direction of rotation (col. 8, lines 49-53). This disclosure is seen as equivalent to the determining the location of the reference mark.

6. On page 6 of the Remarks, the Applicant traverses the rejection of claim 5, arguing that the optical system of Howard does not form an image of the disk.

The Examiner again respectfully disagrees. As currently applied to the reference both disks 75 and 72 fulfill the limitations to be seen as the disk in question for claim 2. With regards to claim 5, specifically the 72 disk is seen as further disclosing the limitations recited therein.

Furthermore the use of a phototransistor and LED is seen as being especially pertinent to the language of claim 5. Currently the claim requires that an image of the disk be projected into an imaging subsystem. Howard's use of a LED to illuminate the disk and in turn be received by the phototransistor is seen an equivalent method of image projection.

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7. The Applicant argues, on page 6 of Remarks, that with regards to claim 6, Howard does not disclose an elongated body. The Examiner respectfully disagrees. It seems clear from figures 6 and 7 at least that Howard's device is an elongated body.

8. Finally on page 6, the Applicant traverses the rejection of claim 4, repeating arguments already discussed that have not been seen as persuasive.

All the arguments by the Applicant have been fully considered, but are not persuasive. As such the rejections from the previous Office Action are maintained.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-3 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Badyal et al (US 6,151,015) in view of Howard (US 6,097,374).

With respect to claim 1, Badyal discloses, a pointing device (fig. 1) comprising:

- an elongated body (102 in fig. 1) having a transparent end (122 in fig. 1; col. 3, lines 23-24) adapted for movement over a surface (clear from fig. 1);
- an illumination subsystem (104 in fig. 1) that illuminates said surface in an area adjacent to said transparent end (col. 3, lines 26-30);
- an imaging subsystem (108 and 110 in fig. 1) that forms images of a portion of said surface in said area (col. 3, lines 26-30);
- a controller (col. 4, lines 44-46) that periodically compares two of said images.

Badyal does not expressly disclose, a reference mark system or that images are compared based on the amount of rotation.

Howard discloses, a reference pointing mechanism (fig. 8b) that defines a direction (direction of gravity) that is independent of the rotations of an elongated body (figs. 6, 7) and measures the orientation of an elongated body relative to said direction (as understood by the Examiner, the tilt of the body is measured relative to the direction of gravity), and that compares two images based on their amount of rotation as determined from said orientation (col. 8, lines 49-54).

Howard and Badyal are analogous art because they are both from the same field of endeavor namely, cursor control devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include the gravity reference pointing mechanism and detection method of Howard in the pen mouse of Badyal.

The motivation for doing so would have been allowing more flexibility to the user and allow rotation of the pen within their grasp (Badyal; col. 3, lines 53-55).

Therefore it would have been obvious to combine Badyal with Howard for the benefit of user flexibility when using the device to obtain the invention as specified in claim 1.

With respect to claim 2, Badyal and Howard disclose, the pointing device of claim 1 (see above).

Howard further discloses, wherein said reference mark system comprises:

a disk that is free to rotate about an axis through said disk (75 in fig. 8b), said disk comprising a reference mark (76 in fig. 8b) that is displaced from said axis, said disk having an orientation mechanism (76 in fig. 8b) that maintains said disk in a fixed orientation relative to the earth (col. 8, lines 42-47); and

a sensor for determining the location of said reference mark relative to said elongated body (72-74, 77-78 and 29 in fig. 8b; col. 8, lines 42-57).

With respect to claim 3, Badyal and Howard disclose, the pointing device of claim 2 (see above).

Howard further discloses, wherein said orientation mechanism comprises a weight (76 in fig. 8b) on said disk, said weight being displaced from said axis (col. 8, lines 45-46).

With respect to claim 5, Badyal and Howard disclose, the pointing device of claim 2 (see above).

Howard further discloses, wherein said sensor comprises an optical system (77-78 and 29 in fig. 8b) for projecting an image of said disk into said imaging subsystem (col. 8, lines 42-57).

With respect to claim 6, Badyal and Howard disclose, the pointing device of claim 2 (see above).

Howard further discloses, wherein said sensor comprises a reference mark sensor (77-78 and 29 in fig. 8b) that measures the orientation of said disk relative to said elongated body (col. 8, lines 42-57; figures 6, 7).

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11. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Badyal et al (US 6,151,015) in view of Howard (US 6,097,374) and further in view of Blonder (US 5,620,371).

With respect to claim 4, Badyal and Howard disclose, the pointing device of claim 2 (see above).

Neither Badyal nor Howard disclose, wherein said orientation mechanism comprises a magnet attached to said disk.

Blonder discloses, a cursor control device that teaches the use of a bar magnet (145 in fig. 4) attached to a sphere to always orient the sphere towards magnetic north (col. 3, lines 1-7).

Blonder, Badyal and Howard are all analogous art because they are all from the same field of endeavor namely cursor control devices.

At the time of the invention it would have been obvious to one of ordinary skill in the art to replace the weight of Howard and Badyal with a magnet as taught by Blonder.

The motivation for doing so would have been for use when a gravity dependent system would be ineffective, such as movement perpendicular to the force of gravity.

Therefore it would have been obvious to combine Blonder with Howard and Badyal for the benefit of increased flexibility in the use of the device to obtain the invention as specified in claim 4.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Will Boddie whose telephone number is (571) 272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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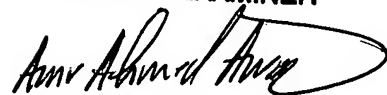
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Wlb

8/4/06

AMR A. AWAD
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read "Amr A. Awad", written in a cursive style with a large loop at the end.